



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,944	10/31/2003	Naoya Sashida	021557A	8925

23850 7590 09/25/2006

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

DICKEY, THOMAS L

ART UNIT PAPER NUMBER

2826

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,944

Applicant(s)

SASHIDA, NAOYA

Examiner

Thomas L. Dickey

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152:

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/315,929.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/24/06</u> | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2826

DETAILED ACTION

1. The amendment filed on 09/05/2006 has been entered.

Information Disclosure Statement

2. The Information Disclosure Statement filed on 4/24/2006 is considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by OKUTOH ET AL. (6,201,271), as cited by Applicant on 11/15/05.

Okutoh et al. discloses a semiconductor device with a first insulating film 6 formed over a semiconductor substrate 1; capacitor constructed by forming a lower electrode 22, a strontium-bismuth-titanate (SBT) dielectric film 23, and an upper electrode 15 sequentially on the first insulating film 6; a titanium oxide first capacitor protection insulating film 12 covering the dielectric film 23 and the upper electrode 15; an ozone-

Art Unit: 2826

CVD formed silicon oxide second capacitor protection insulating film 13 formed on the first capacitor protection insulating film 12; a plasma-CVD formed silicon oxide second insulating film 17 formed on the second capacitor protection insulating film 13, said insulating film 17 covering the capacitor (note figure 8); wherein an amount of carbon contained in the second capacitor protection insulating film 13 is larger than an amount of carbon contained in the second insulating film 17, a hole (no part #, seen in figure 8, being filled by wiring 24) reaching the upper electrode 15 is formed in the first capacitor protection insulating film 12, the second capacitor protection insulating film 13, and the second insulating film 17, and a wiring 24 that is electrically connected to the upper electrode 15 via the hole is formed on the second insulating film 17. Note figure 8 and column 8 line 26 through column 11 of Okutoh et al. It should be noted that Okutoh et al.'s second insulating film 17 is formed by plasma enhanced CVD and thus inherently lower in organic residue such as moisture and carbon than the ozone-CVD formed second capacitor protection insulating film 13. Those having skill in the art have long known this distinction and discussed it in various publications. Investigators seem to agree that the plasma temperatures gasify carbon and carry it away, resulting in a lower carbon content of the film made by this process. See Otsubo et al. 5,275,977 (figure 3a and column 5 lines 34-49) or Maeda et al. 5,554,570 (column 3 lines 19-22 or column 11 lines 1-7). Accord, Yamazaki et al. 2002/0006711 and Yau et al. 2001/0026849.

Art Unit: 2826

Response to Arguments

4. Applicant's arguments filed 09/05/2006 have been fully considered but they are not persuasive.

It is argued, at page 8 of the remarks, that "In the outstanding anticipation rejection, the Examiner alleges that layer (12) of Okutoh (diffusion preventing layer) corresponds to the presently claimed "first capacitor protection insulating film" (14); that layer (13) of Okutoh (second interlayer insulating film) corresponds to the presently claimed "second capacitor protection insulating film" (16); and that layer (17) of Okutoh (third interlayer insulating film) corresponds to the presently claimed "second insulating film" (17)." The Examiner made findings identifying the claimed elements as elements of the device described by Okutoh's disclosure based on the claimed properties (physical shape and location, and materials from which these elements must be made in order to meet the claims, including the dependent claims that further distinguish Applicant's invention). It is true that Okutoh refers to the claimed "first capacitor protection insulating film" as a "diffusion preventing layer," to the claimed "second capacitor protection insulating film" as a "second interlayer insulating film," and to the claimed "second insulating film," as a "third interlayer insulating film." This is, to the Examiner's thinking, perfectly understandable. Okutoh works for Sharp. The Applicant works for Fujitsu. Fujitsu and Sharp, by

Art Unit: 2826

virtue of their competition, share no information with each other unless absolutely necessary. It is unsurprising that each company should develop its own private technical language, anymore than if the Redskins and the Dallas Cowboys should refer to the same formation as "Red 47," and "Right 22 Strong," respectively. In any event the Examiner is specifically charged that although a reference must disclose the claimed elements arranged as required by the claim, there is no *ipsissimis verbis* test, i.e., identity of terminology is not required. See MPEP § 2131; *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

It is further argued at page 8 that "With due respect to the Examiner, the outstanding Action however misinterprets Okutoh's semiconductor device. The layer (13) of Okutoh (second interlayer insulating film) corresponds to the presently claimed 'second insulating film' (17) [presumably here Applicant refers to part 17 of Applicant's figures 11 through 1R], as layer (13) of Okutoh is the insulating layer which is arranged for covering the capacitor in the same manner as present layer (17)."

With all respect to Applicant, the Examiner cannot find a resemblance between Applicant's layer 17 and Okutoh's layer 13. Okutoh's layer 13 is formed directly on Okutoh's titanium oxide layer 12. Applicant's layer 17 is carefully separated from Applicant's titanium oxide layer 14 by Applicant's layer 16. On page 26 lines 18-21 of the original specification, Applicant reports that as an experiment he formed layer 17

Art Unit: 2826

directly onto titanium oxide layer 14. The results, as Applicant documents in his figure 11, were disastrous. One would have to expect the same disastrous results if Okutoh's layer 13, which is formed directly on Okutoh's titanium oxide layer 12, were asked to stand in for Applicant's layer 17. Fortunately this is not necessary. Okutoh forms low carbon layer 17 (identical to Applicant's low carbon layer 17) in a location remote from Okutoh's titanium oxide layer 12, just as Applicant forms his own low carbon layer 17 remotely from his own titanium oxide layer 14.

Finally it is argued, "Layer (12) of Okutoh is disclosed as being a titanium oxide film for use as a diffusion preventing layer (column 9, lines 47-50)." With all due respect, the Examiner wishes to point out that Applicant requires Okutoh's layer 12 to be titanium oxide, or some equivalent. Note claim 4 of the instant application. Had Applicant required the first capacitor protection insulating film (Okutoh's layer 12) to be zinc selenide, Okutoh would not be the focus of this discussion. Rather, we would be discussing a reference identical to Okutoh in every respect except for having a zinc selenide first capacitor protection insulating film instead of Okutoh's titanium oxide first capacitor protection insulating film. It is noted that nowhere in the application does Applicant explain why he wants a titanium oxide first capacitor protection insulating film. For all we know, Applicant likes titanium oxide precisely because it inhibits diffusion. The law requires Applicant to disclose his liking for titanium oxide, should he have one.

Art Unit: 2826

This being done, Applicant is allowed to like titanium oxide for its diffusion-inhibiting properties without even realizing that this is why he likes titanium oxide, or even without realizing that titanium oxide has such properties. 35 USC §112 ¶ 1, Best Mode Clause.

Conclusion

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

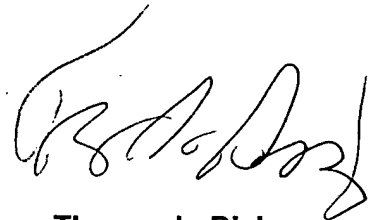
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L. Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

Art Unit: 2826

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas L. Dickey
Primary Patent Examiner
Art Unit 2826